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NATURAL RESOURCES DEFENSE COUNCIL

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Steve Johnson
Assistant Administrator
Office of Prevention, Pesticides, and Toxic Substances
U.S. Environmental Protection Agency
1200 Constitution Ave., NW
Washington, DC 20460

Dear Mr. Johnson:

In monitoring the Agency's compliance with the consent decree in *NRDC et al. v. Whitman*, Case No. C-99-3701 CAL (N.D. Cal.), we have been carefully tracking EPA's actions on atrazine. We have recently reviewed the charge questions that are posted on EPA's website for the consent decree-mandated meeting of the Scientific Advisory Panel (SAP), to be held on July 17, concerning atrazine and cancer (http://www.epa.gov/scipoly/sap/2003/july/charge.htm). We were surprised to find that the two questions posed to the SAP ask the panelists to consider only the relationship of exposure to atrazine with *prostate* cancer, but not other cancers.

NRDC is troubled by the unduly narrow focus of the agency's charge. As you are aware, our August, 2002 amendment to the consent decree in *NRDC v. Whitman* specifies that EPA will present to the SAP, among other things, "other scientific issues concerning atrazine, including the significance of data bearing on the association between atrazine exposure and the incidence of prostate *or other cancer* in humans. . . ." *Id.* (emphasis added).

For obvious reasons, we expected -- and continue to expect -- that EPA will ask the SAP for its views about the potential for atrazine to cause any form of cancer, not merely prostate cancer. To that end, and because time is short before the meeting, below are additional suggested charge questions, along with citations to material that SAP panelists should have available to them to evaluate these questions.

1. In 1998 the International Agency for Research on Cancer reviewed atrazine, and determined that there is sufficient evidence in experimental animals for the carcinogenicity of atrazine (IARC Monographs, Volume 73, 1999). This evaluation was based on evidence of mammary tumors in intact female Sprague-Dawley (SD) rats, but not in Fischer 344 rats, CD-1 mice, or ovariectomized SD rats. **In your opinion, is there sufficient evidence for the carcinogenicity of atrazine in experimental animals?**

2. At the time of the IARC evaluation and the previous EPA SAP evaluation, it was thought that the hypothesized mechanism by which atrazine induced mammary tumors in SD rats, attenuation of the leutenizing hormone surge, was not directly relevant to humans. There

are now some in vitro and laboratory studies suggesting that atrazine may also induce aromatase activity, leading to conversion of testosterone to estrogen.[i] [ii] [iii] **Is the mechanism of action in animals sufficiently understood to determine whether animal tumors are or are not likely to be relevant to humans in general? Does the relevance of the animal cancer data vary in any way in particular sub-populations, or life-stages?**

3. EPA has drafted its 2003 Cancer Guidelines and Supplemental Guidance for Assessing Cancer Susceptibility from Early-Life Exposure to Carcinogens. This supplemental guidance was reviewed by the Scientific Advisory Board last month, who recommended that the EPA make their guidance even more protective of early-life stage exposures. In particular, the SAB recognized that "[i]t is likely that early-life stages have windows of susceptibility to carcinogens acting through endocrine disruption." (SAB report, June 20, 2003) There is evidence that atrazine may act as an endocrine disruptor in several animal species. Atrazine attenuates the LH surge and may affect aromatase as described above. In addition, male[iv] and female[v] Wistar rats displayed delayed puberty following atrazine treatment. In Fischer rats, atrazine treatment resulted in reduced sperm motility.[vi] Treatment of nursing Wistar dams with atrazine suppressed suckling-induced prolactin release, leading to lateral prostate inflammation in the suckling male offspring.[vii] Frogs exposed to atrazine under laboratory conditions displayed gonadal abnormalities, including hermaphroditism. [viii] [ix] [x] [xi] Recent data suggest that exposure to atrazine during development may predispose a rodent to cancer later in life.[xii] **Are the data indicating that atrazine alters endocrine function relevant to atrazine's potential to cause cancer in humans? Do these conclusions apply to exposures during all life stages?**

4. An epidemiology study by P. Mills concluded that Hispanic farm workers with relatively high levels of exposure to triazine herbicides (simazine) experienced elevated risk of prostate cancer compared to workers with lower levels of exposure.[xiii] An epidemiology study by Donna et al found an association between triazine exposure and ovarian cancer among exposed women.[xiv] The National Cancer Institute Agriculture Health Study found a significant association between female pesticide applicators and ovarian cancer. The effect is observed in both Iowa and North Carolina, and is statistically significant when they are combined (8 observed case cases/ 1.9 expected cases).[xv] **Are these studies relevant to an overall cancer determination for atrazine?**

We look forward to your prompt response to this letter. If we can be of any further assistance in ensuring that the SAP considers the full suite of cancer issues, please do not hesitate to contact us at (202) 289-6868.

Sincerely,

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